ABSTRACT OF THE DISCLOSURE

In an optimum design method comprising a first solution determining step of solving an optimization problem of a first evaluation function for a state variable vector with a design variable vector being as a parameter, and a second solution determining step of solving an optimization problem of a second evaluation function for the design variable vector and the state variable vector thus obtained, the second solution determining step includes the steps of computing a gradient vector of the second evaluation function for the design variable vector, computing a first coefficient based on a value of a norm of the gradient vector, computing a search vector based on the first coefficient, computing a second coefficient, and updating the design variable vector based on the second coefficient. The second coefficient computing step includes the first solution determining step, the first solution determining step is executed as an iterative method based on the gradient vector, and the state variable vector is not initialized during iteration. The optimum design method is precisely adaptable for structural changes.